Contour Orchard and Other Fruit Area (Acre) 331

DEFINITION

Planting orchards, vineyards, or small fruits so that all cultural operations are done on the contour.

PURPOSE

To reduce soil and water loss, to better control and use water, and to operate farm equipment more easily.

CONDITIONS WHERE PRACTICE APPLIES

On sloping, well-drained orchard and other fruit land where soil and water losses need to be controlled, especially if a permanent cover is not established. Topography needs to be uniform to permit safe and practical operation of farm equipment.

GENERAL CRITERIA

Use the Revised Universal Soil Loss Equation (RUSLE) contour tables in Section I of the local Field Office Technical Guide (FOTG) or the latest NRCS soil erosion planning technology to determine combinations of cropping systems and conservation practices needed for specific sites.

Rows shall be laid out on contour lines. Rows may vary by not more than 3 percent for a distance up to 100 feet. This will help prevent break over of water that could create concentrated flow. A 3% slope may be needed to adjust for waterways or ridges on well-drained sandy soils; 0.5-1.0% on fine textured soils. This is important to provide good drainage.

Locate the first guideline approximately one terrace spacing from the top of the slope. On this topography, the guideline would be laid out to the minimum grade. The desired grade will vary depending on the expected amount of runoff and the erosiveness of the soil.

On well-drained soils in soil management groups, 3.0, 4.0 and 5.0 with sandy loam or coarser topsoil, the grade may vary between 0 and 2.0 percent.

On more poorly drained soils, in soil management groups, 1.0, 1.5 or 2.5 with loam or fine textured topsoil, a minimum grade of 0.2 percent is desired.

Land shaping can be used to form a more uniform slope.

The distance the runoff must be carried by the crop row should be limited so that it does not break over the contour rows.

All runoff from contouring shall be delivered to stable outlets, such as grassed waterways, field borders, water and sediment control basins, or underground outlets for terraces and diversions.

CONSIDERATIONS

The size of trees at maturity will determine the row spacing.

Contour guidelines will be spaced at intervals that coincide with the desired tree row spacing.

Additional erosion control measures, such as cover cropping, contour buffer strips, or conservation tillage will be considered.

Adequate access will be provided to the orchard for cultural operations.

PLANS AND SPECIFICATIONS

Specifications for establishment and operation of this practice shall be prepared for each field or treatment unit according to the Criteria, Considerations, and Operation and Maintenance described in this standard.

The minimum documentation for this practice as applied is as follows:

- Location map
- Layout map with waterways
- Species of trees or fruit by row
- Buffer strips if needed and width
- Row grades and waterways grades
- Land shading needs
- Cost estimate for installation

OPERATION AND MAINTENANCE

Maintain buffer strip function by removing excess soil buildup to maintain sheet flow.

Farming operations should begin on the contour baselines and proceed both up and down the slope in a parallel pattern until patterns meet. Where field operations begin to converge between two non-parallel contour baselines, establish a correction area that is either permanently in sod, established to an annual close-grown crop, or is in cover-management condition 3.

Repair water erosion damage to other practices that are necessary for the contouring system to function properly.

PLANNING CONSIDERATIONS FOR QUANTITY AND QUALITY

Quantity

1. Effects the water budget, especially effects on volume and rates of runoff and infiltration.

2. Decreases in surface runoff and increases in infiltration with any benches or terraces constructed to provide access to growing plants. Consider the type of bench or terrace (inward sloping versus outward sloping), width, degree of slope, and vegetative cover at the time of runoff.

Quality

1. Effects on erosion and the movement of sediment, and soluble and sediment-attached substances carried by runoff.

2. Effects of increased volumes of soluble nutrients, pesticides, and salts contained in infiltrating water. Comparison should be made to non-contoured orchards on sloping ground or to the present land use if not now in orchard.